

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

AD-A208 722

DULE

1b. RESTRICTIVE MARKINGS

3. DISTRIBUTION/AVAILABILITY OF REPORT

Approved for public release;
distribution unlimited.

4. PERFORMING ORGANIZATION REPORT NUMBER(S)

5. MONITORING ORGANIZATION REPORT NUMBER(S)

AFOSR-TR- 89-0680

6a. NAME OF PERFORMING ORGANIZATION
Graduate School of Management
University of Rochester6b. OFFICE SYMBOL
(if applicable)

7a. NAME OF MONITORING ORGANIZATION

AFOSR

6c. ADDRESS (City, State, and ZIP Code)

Rochester NY 14627

7b. ADDRESS (City, State, and ZIP Code)

BLDG 410
BAFB DC 20332-64488a. NAME OF FUNDING / SPONSORING
ORGANIZATION
AFOSR8b. OFFICE SYMBOL
(if applicable)

9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER

AFOSR-79-0043

8c. ADDRESS (City, State, and ZIP Code)

BLDG 410
BAFB DC 20332-6448

10. SOURCE OF FUNDING NUMBERS

PROGRAM
ELEMENT NO.
PE61102FPROJECT
NO. 2304TASK
NO. A5WORK UNIT
ACCESSION NO.

11. TITLE (Include Security Classification)

FINAL TECHNICAL REPORT ON AFOSR-79-0043

12. PERSONAL AUTHOR(S)

J. Keilson

13a. TYPE OF REPORT
Final13b. TIME COVERED
FROM 7/1/79 TO 6/30/8114. DATE OF REPORT (Year, Month, Day)
Dec 8115. PAGE COUNT
2

16. SUPPLEMENTARY NOTATION

17. COSATI CODES

| FIELD | GROUP | SUB-GROUP |
|-------|-------|-----------|
| | | |
| | | |
| | | |

18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This report summarizes progress made under the grant and lists publications resulting from the research effort.

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89 6 06 033

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT

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21. ABSTRACT SECURITY CLASSIFICATION

Unclassified

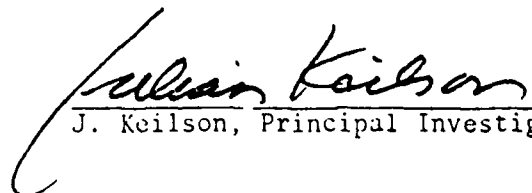
22a. NAME OF RESPONSIBLE INDIVIDUAL

22b. TELEPHONE (Include Area Code)
767-502522c. OFFICE SYMBOL
NM

Final Technical Report on AFOSR 79-0043

The period of activity (July 1, 1979 - June 30, 1981) was a fruitful one. A large number of papers were supported in whole or in part by the grant, and many of these have already been accepted for publication. A list of papers -- working, submitted, and published -- is attached. Those papers that relate to the logistical objectives of the grant or that generate methodology for objectives of the study are indicated on the list by an asterisk. Of special interest to logistic practice are the papers "Prediction of lifetime from incomplete survival data" (No. 1) and "System balance for extended logistic systems" (No. 7). Both of these papers are believed to be of direct relevance to USAF procurement guidance needs. The methodology papers oriented to the objectives of the grant are the paper on "The bilateral Laguerre transform" (No. 2) and that on "Row-continuous finite Markov chains, Structure and algorithms" (No. 8). The latter paper will be of key value for the study of robustness and sensitivity of logistical models to underlying failure time and repair time distributions.

The funds and the support were also instrumental in the training and support of two graduate students. The first of these, Ushio Sumita, completed his degree in June 1981, and the second student, Mark Zachmann, is expected to have completed all requirements by September 1982.


J. Keilson, Principal Investigator

Date: December 11, 1981

LIST OF SUPPORTED PAPERS

AFOSR ██████████ 79-0043

- ** 1. "Prediction of lifetime from incomplete survival data," (with U. Sumita), Working Paper No. 7920, submitted to Naval Research Logistics Quarterly.
- ** 2. "The bilateral Laguerre transform," (with W. Nunn and U. Sumita), Working Paper No. 8008, appeared in Applied Mathematics and Computation, Vol. 8, No. 2, March 1981.
- * 3. "On the distribution and covariance structure of the present value of a random income stream," accepted by the Journal of Applied Probability, to appear March 1982.
- 4. "A decomposition of the beta distribution, related order and asymptotic behavior," (with U. Sumita), submitted to the Annals of the Institute of Statistical Mathematics.
- 5. "Significance points for some tests of uniformity on the sphere," (with D. Petrondas, U. Sumita, J. Wellner), submitted to the Journal of Statistical Computation and Simulation.
- 6. "Waiting time distribution response to traffic surges via the Laguerre transform," (with U. Sumita), to appear in Boca Raton Proceedings.
- ** 7. "System balance for extended logistic systems," (with S. C. Graves), to appear in Operations Research.
- ** 8. "Row-continuous finite Markov chains, Structure and algorithms," (with U. Sumita and M. Zachmann), submitted to Operations Research.
- 9. "The Ehrenfest chain as an approximation to the O-U process," (with U. Sumita and M. Zachmann), to be submitted.
- * 10. Homogeneous row-continuous bivariate Markov chains with boundaries," (with M. Zachmann), to be submitted.
- * 11. "The compensation method applied to a one-product production/inventory problem," (with S. C. Graves), appeared in Mathematics of Operations Research, Vol. 6, No. 2, May 1981.

* Directly relevant to study objectives

** Of special interest to logistics and supportive methodology



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